

CLAIMS

1. Measurement device for detecting medical parameters in the human body,
which can be accommodated in a body cavity (2), especially a blood vessel,
5 including at least one sensor (3) and a holder (4), characterized in that the
holder (4) has at least one first and one second magnetic element (5), of which
at least one of the magnetic elements is a magnet and of which one of the
magnetic elements is arranged inside of the body cavity and one of the
magnetic elements is arranged outside of the body cavity (2), and that the
10 measurement device (1) is adapted to be fixed by the holder (4) in the body
cavity (2).
2. Measurement device according to claim 1, characterized in that one of the
two magnetic elements (5) is a magnet and the other is a part made from a
15 ferromagnetic material.
3. Measurement device according to claim 1 or 2, characterized in that both of
the magnetic elements (5) comprise magnets.
- 20 4. Measurement device according to one of claims 1 to 3, characterized in that
the sensor (3) is connected rigidly to the magnetic element (5) arranged inside
of the body cavity (2).
5. Measurement device according to one of the preceding claims, character-
25 ized in that the magnetic element (5) arranged outside of the body cavity (2)
is the magnet.
6. Measurement device according to one of the preceding claims, character-
ized in that the measurement device can be moved within the body cavity (2)
30 by rearranging or shifting the magnet.

7. Measurement device according to one of the preceding claims, characterized in that there are a plurality of sensors (3), which are provided with magnetic elements (5) and which can be fixed in the body cavity (2) by at least one magnet.

8. Measurement device according to one of the preceding claims, characterized in that the measurement device can be inserted into the body cavity (2) via an implantation instrument, a catheter, or the like.

9. Measurement device according to one of the preceding claims, characterized in that the magnetic element (5) arranged outside of the body cavity (2) can be applied to a surface of the body or subcutaneously.

10. Measurement device according to one of the preceding claims, characterized in that the measurement device is at least partially sheathed or encased in a flexible, biocompatible material, especially silicone.

11. Measurement device according to one of the preceding claims, characterized in that the measurement device (1), and especially an electronic components arranged on the device, are provided with an additional coating.

12. Measurement device according to one of the preceding claims, characterized in that the measurement device is provided with a power supply, especially a battery or an accumulator.

13. Measurement device according to one of the preceding claims, characterized in that there is an electronic memory unit (9) for temporary storage of data detected by the sensors in a region of the sensor (3) or one of the magnetic elements (5).

14. Measurement device according to one of the preceding claims, characterized in that an evaluation unit for additional processing of the detected data is provided in a region of the sensor (3) or one of the magnetic elements (5).

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15. Measurement device according to one of the preceding claims, characterized in that the sensors (3) are provided for detecting values of pressure, blood-sugar level, hemoglobin count, oxygen and carbon dioxide partial pressures and content, and/or other relevant values of the body cavity and/or
10 a medium located therein.

16. Measurement device according to one of the preceding claims, characterized in that at least one storage device (8) is provided on the measurement device for housing a material, especially a medicine, to be introduced into the
15 body cavity (2).

17. Measurement device according to claim 16, characterized in that a dosing element for controlled release of the material is provided on the storage device (8).

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18. Measurement device according to claim 17, characterized in that the measurement device is part of a control loop and the dosing element releases the material as a reaction to a measurement value detected by the sensor.

25 19. Measurement device according to one of the preceding claims, characterized in that on the measurement device there is a transmission device (10), through which the measurement device (1) can be connected to a transmitter, receiver, and evaluation unit arranged outside of the body using a wireless and/or wired connection.

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20. Measurement device according to claim 19, characterized in that the transmission device (10) has a radiation output for introducing electromagnetic radiation of different frequencies, especially visible light, into an interior of the body cavity (2).

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21. Measurement device according to claim 19 or 20, characterized in that the measurement device is coupled to the transmitter, receiver, and evaluation unit via at least one optical fiber cable (11).

10 22. Measurement device according to one of the preceding claims, characterized in that the measurement device is provided with at least one additional fastening means, especially a thread holder (7).

15 23. Measurement device according to one of the preceding claims, characterized in that the measurement device is arranged on a stent cage (12).

24. Measurement device according to claim 23, characterized in that the measurement device is integrated at least partially into a lattice structure of the stent cage (12).

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25. Measurement device according to claim 22 or 23, characterized in that the measurement device includes a plurality of sensors, which are connected to the magnetic elements (5) and which are arranged in a plane of the stent cage (12), especially in a uniformly distributed arrangement.